

Lesson 2

Sexual Reproduction

الجمعة القادمة امتحان

- Reproduction
- Plant Support
- Plant Hormones

تسبب الكفة القادمة
(الخميس)

Flowering Plants

Kingdom: Plantae

(mosses)
Bryophyta

Ferns

معراة البذور
Gymnospermae

مغطاة البذور
Angiospermae ✓✓✓

Vascular
System

x

✓

x

✓

Flowering

x

x

x

✓

Fruiting

x

x

✓

Seeded

x

x

✓

MonoCots - DiCots

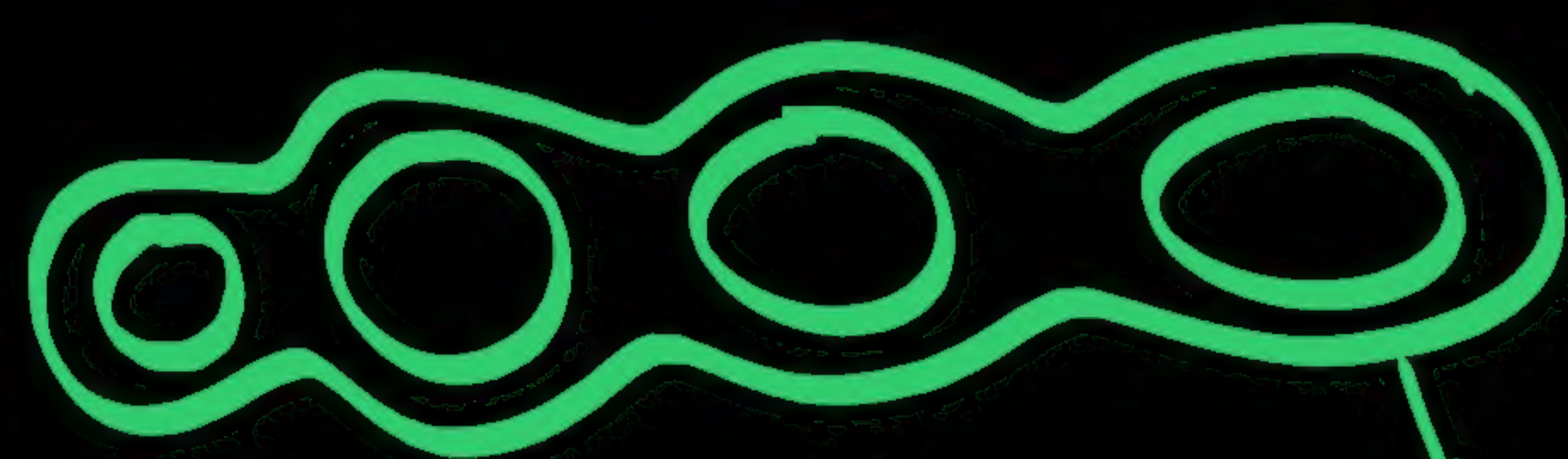
Ex:

Riccia - Funaria - Adiantum
Polypodium

Pinus



Pea Pod



Pericarp

"fruit wall"

Seeds are enclosed within Pericarp

Angiospermae

Gymnospermae



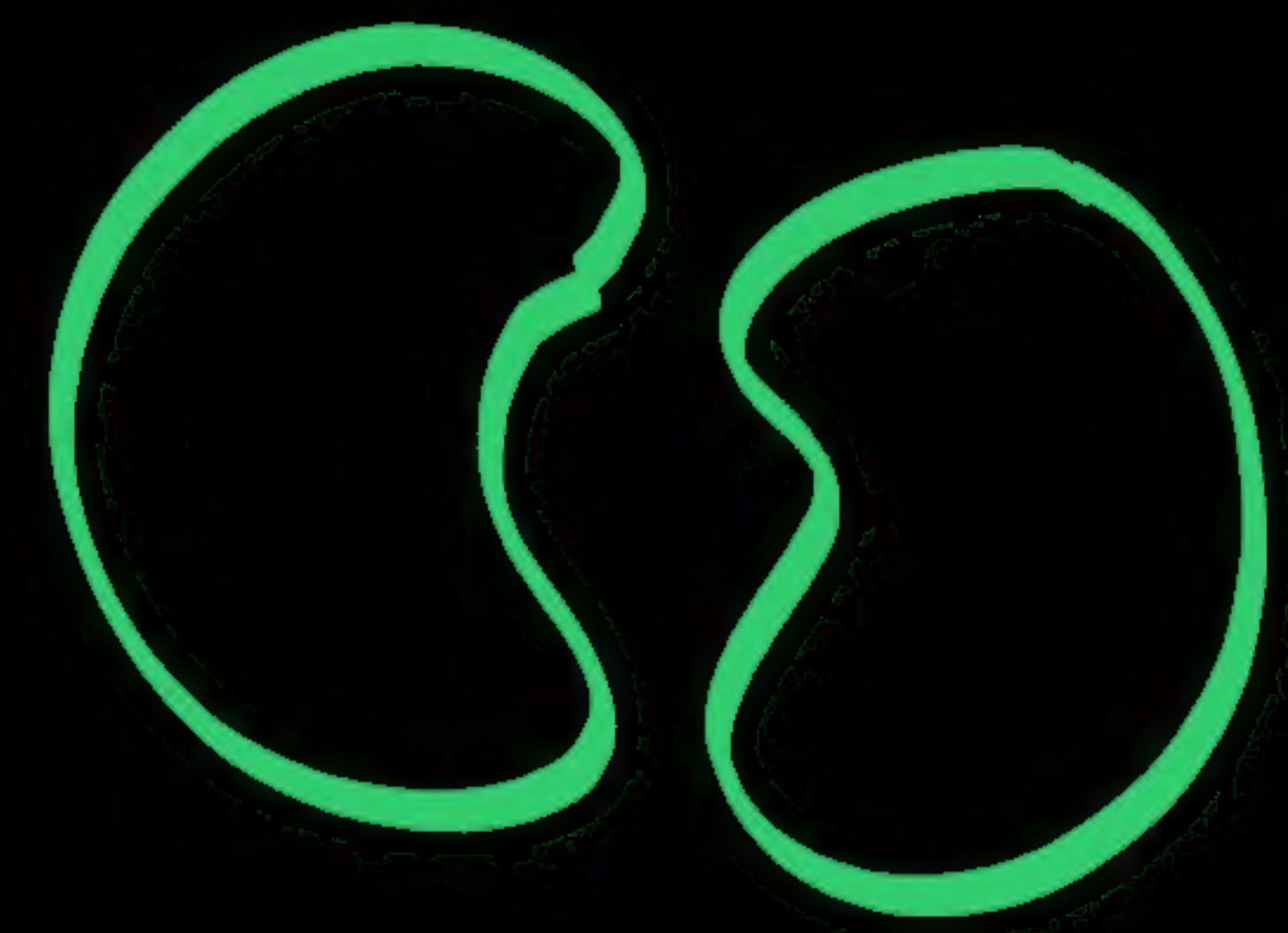
Seeds



Are not enclosed within

Pericarp

Legumes



Cotyledon

(Dicotyledonous)

① DiCot

Angiospermae



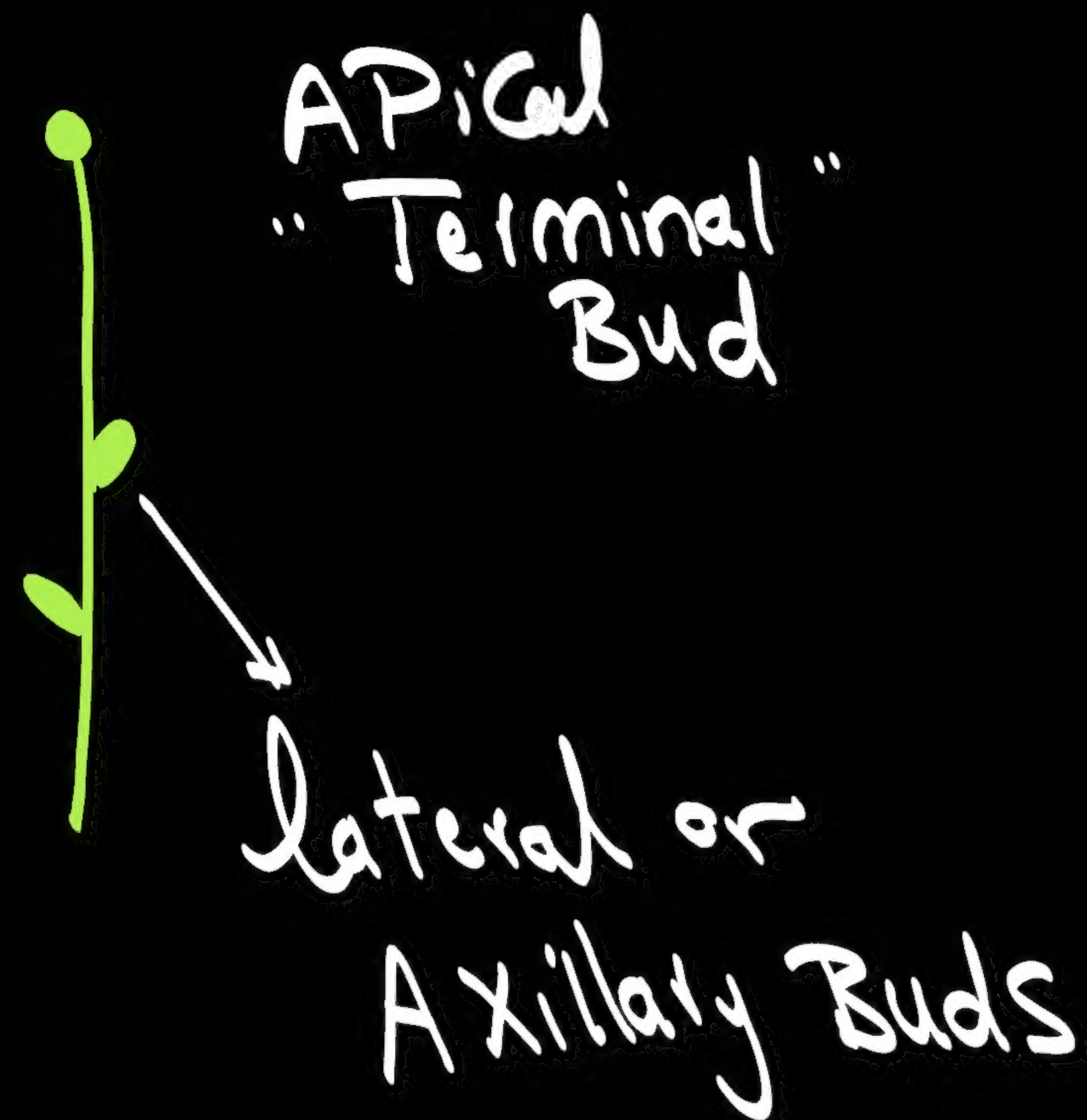
Cotyledon

② Monocot

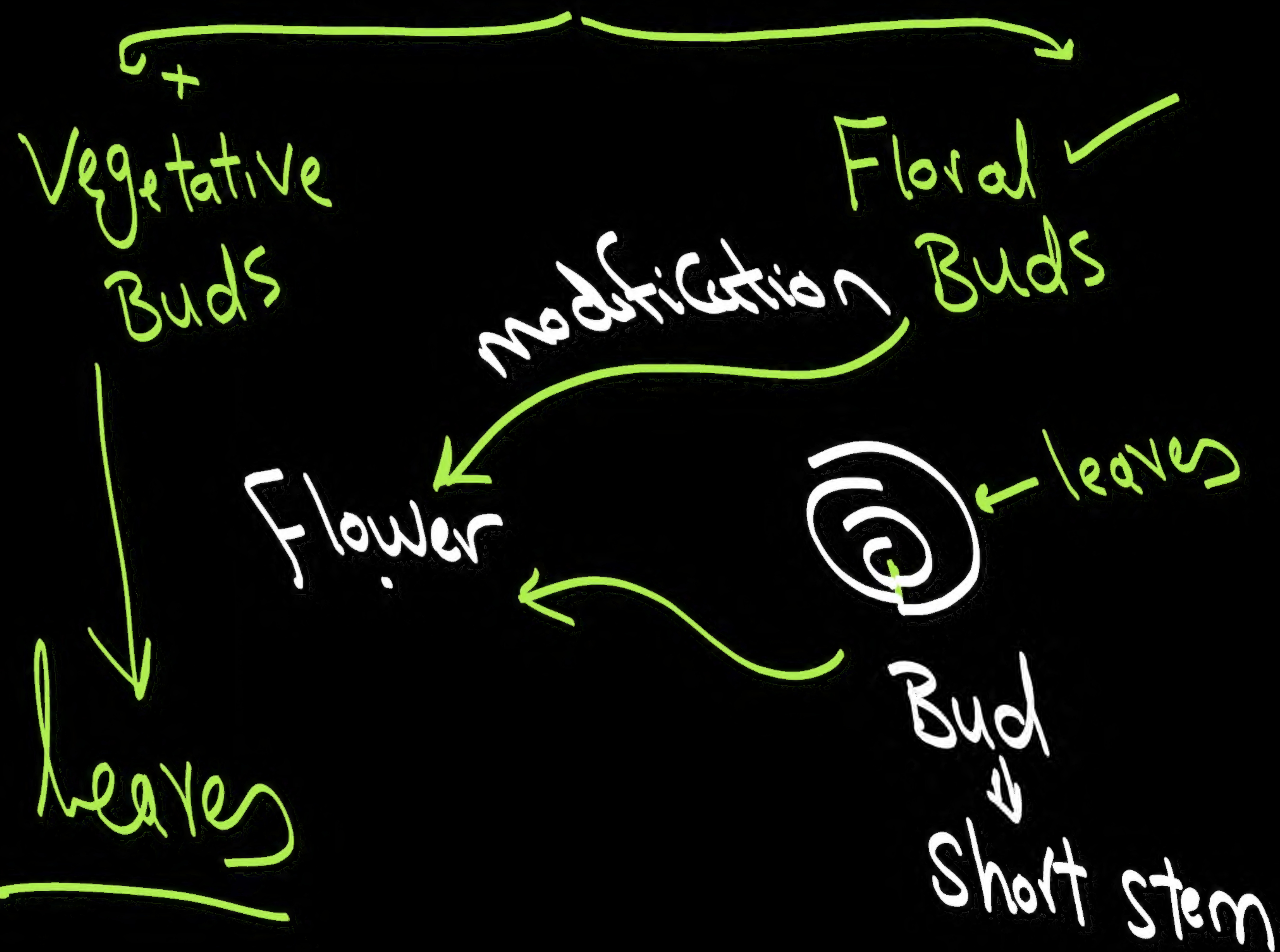
Flower:

- ↳ Sexual reproductive organ.
- ↳ Short stem, its leaves are modified into floral whorls

Buds



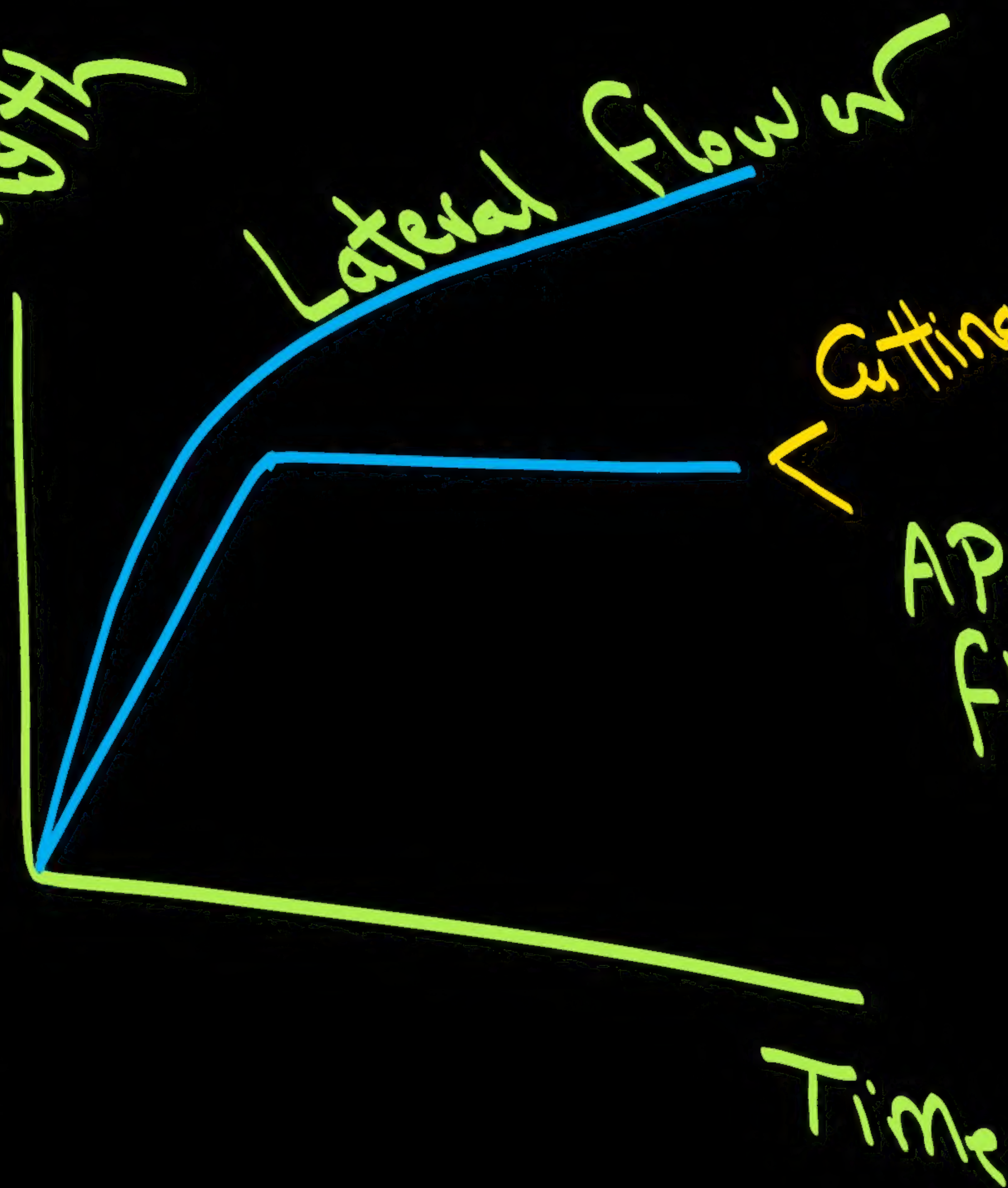
Functions



Flower
Apical bud
transformed
into flower length

① Apical
Flower
→ EX: Tulip

Stop stem elongation



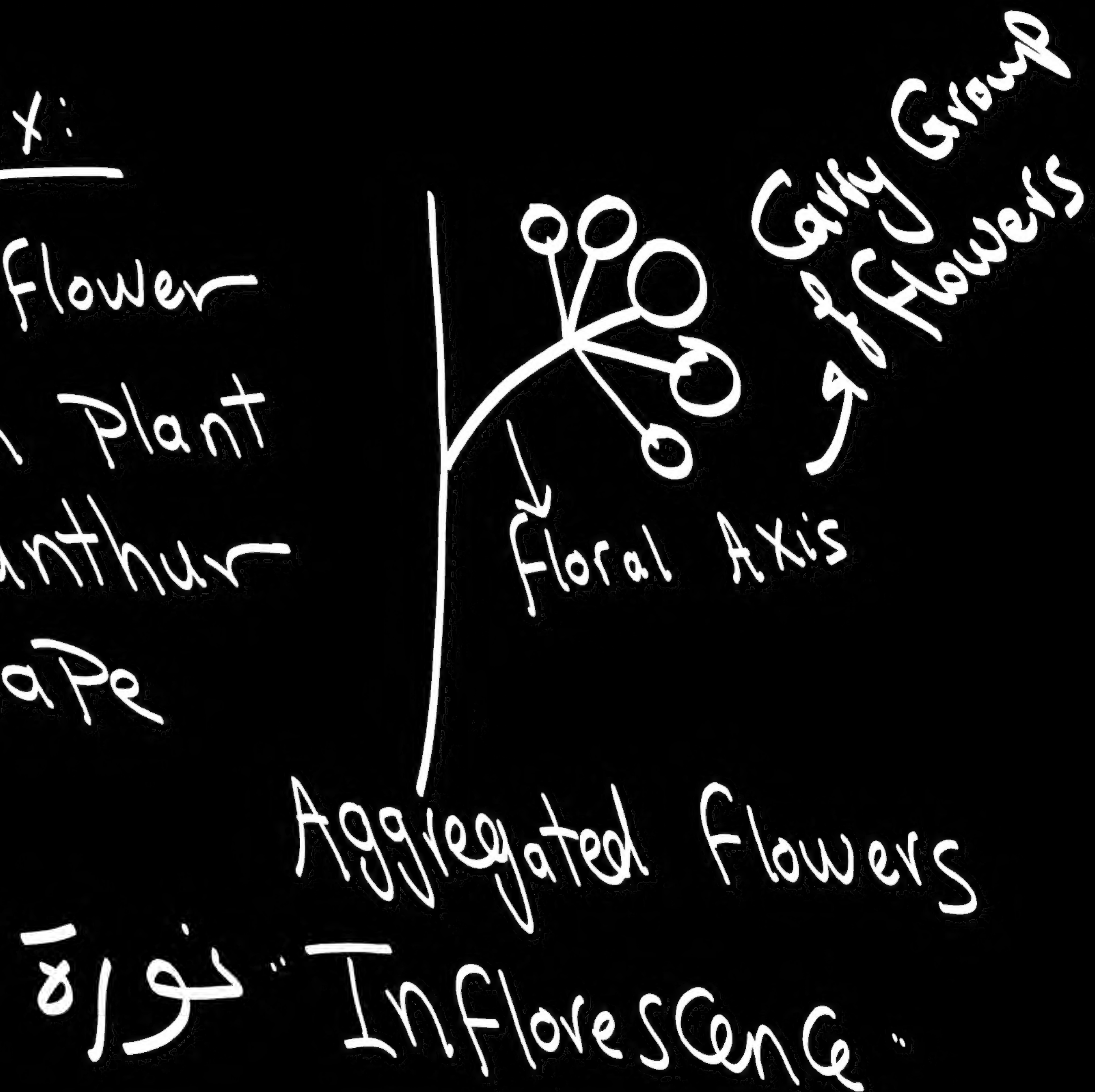
Apical
Bud
still
present

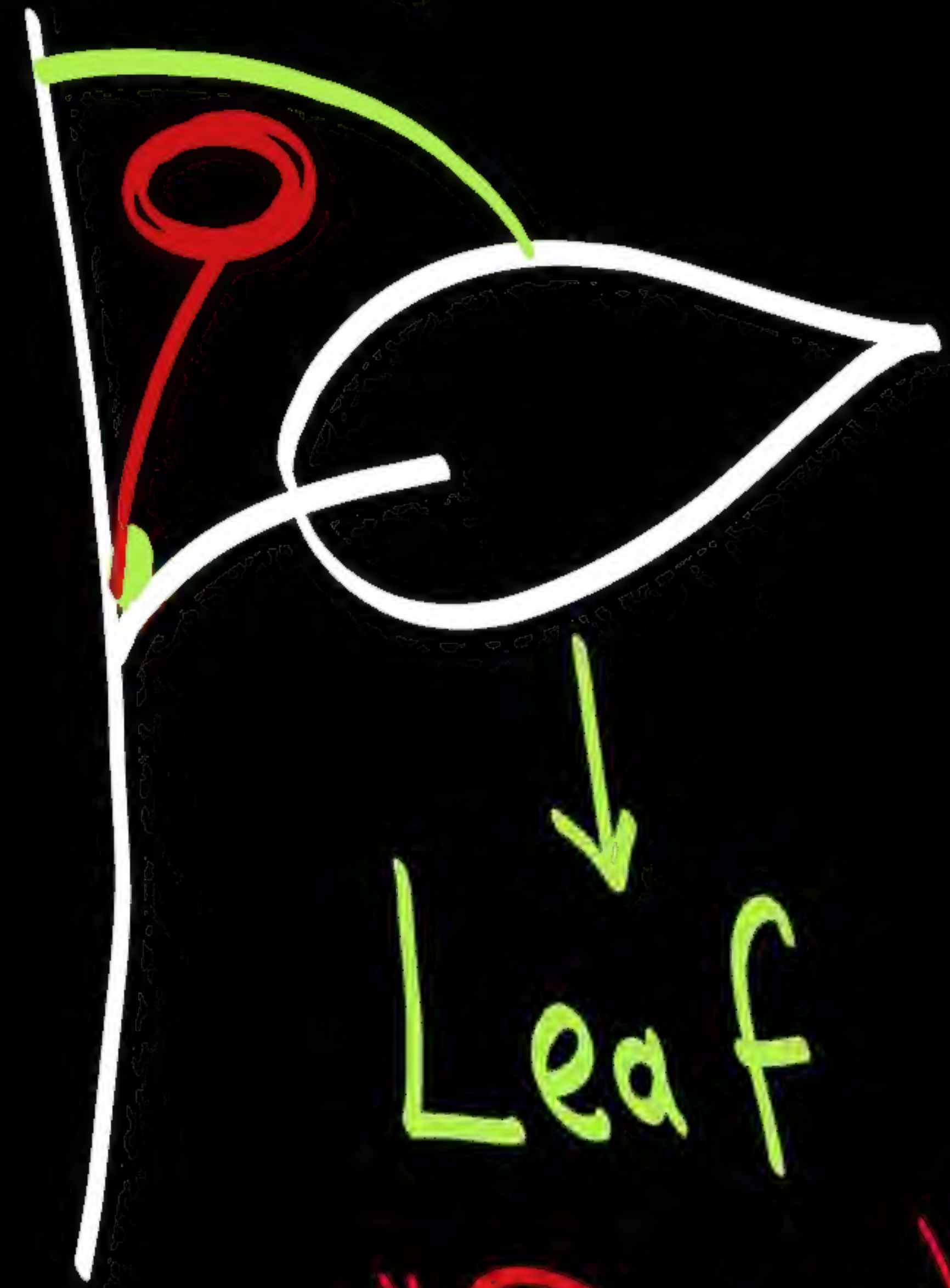
Lateral
flower
EX: Petunia
Doesn't stop stem
elongation



Ex:

- Sun Flower
- Bean Plant
- Maranthus
- Grape



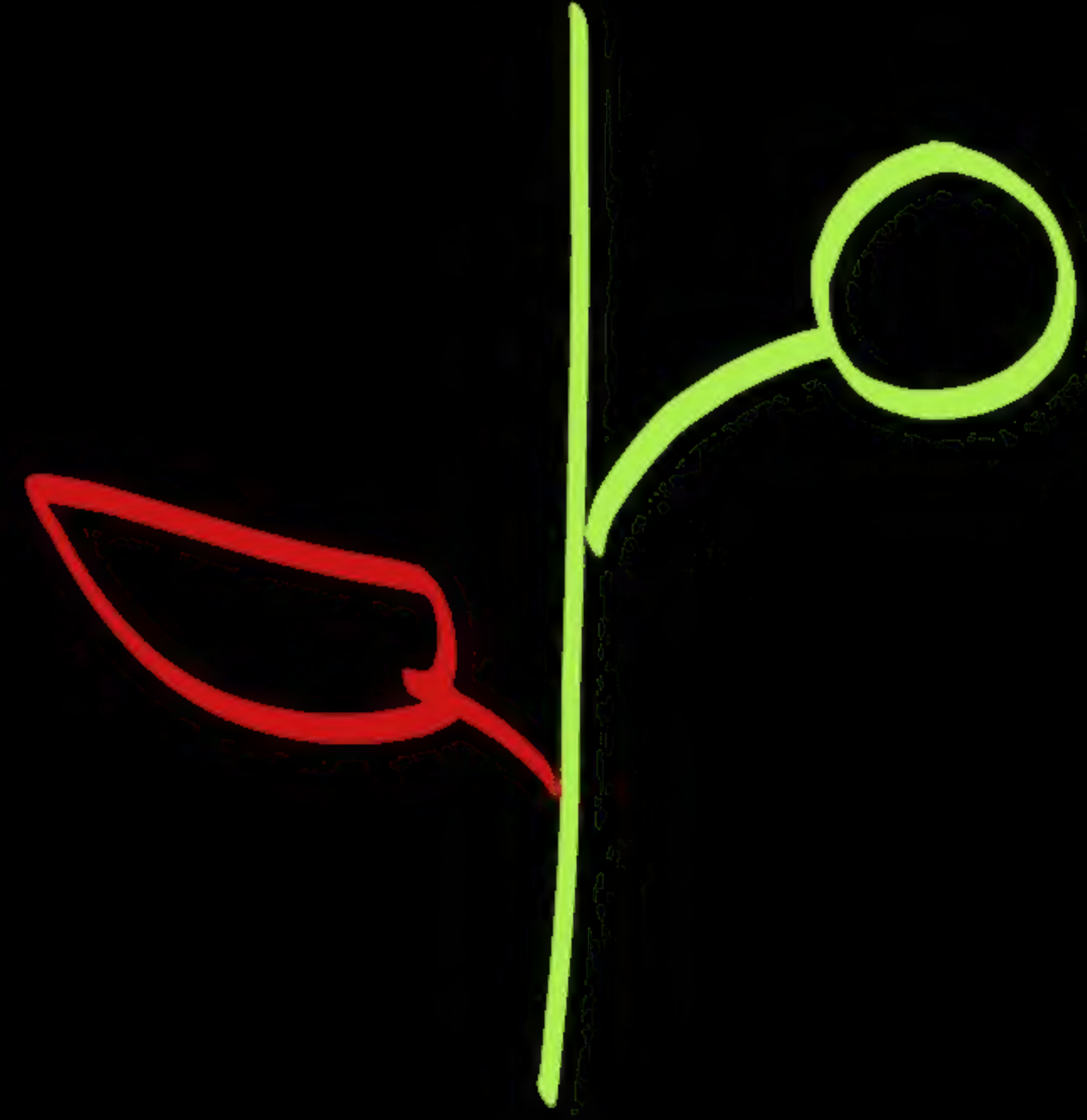


Leaf Axile
Angle between
Stem & upper
Surface of leaf

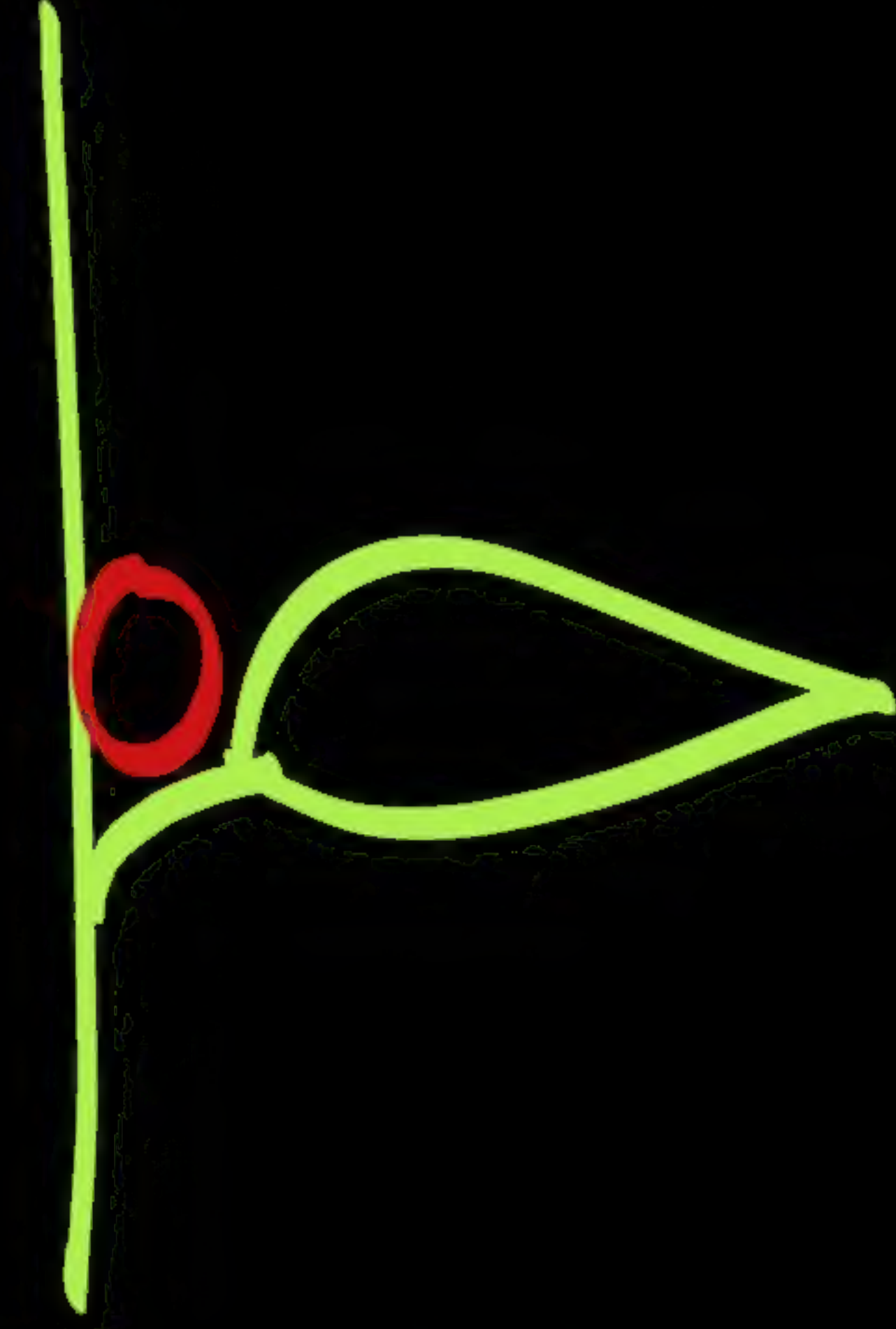
Leaf From its Axile the flower
Emerges.
Green Non-Green "Scale"



- Stalked
- ✓ Bract



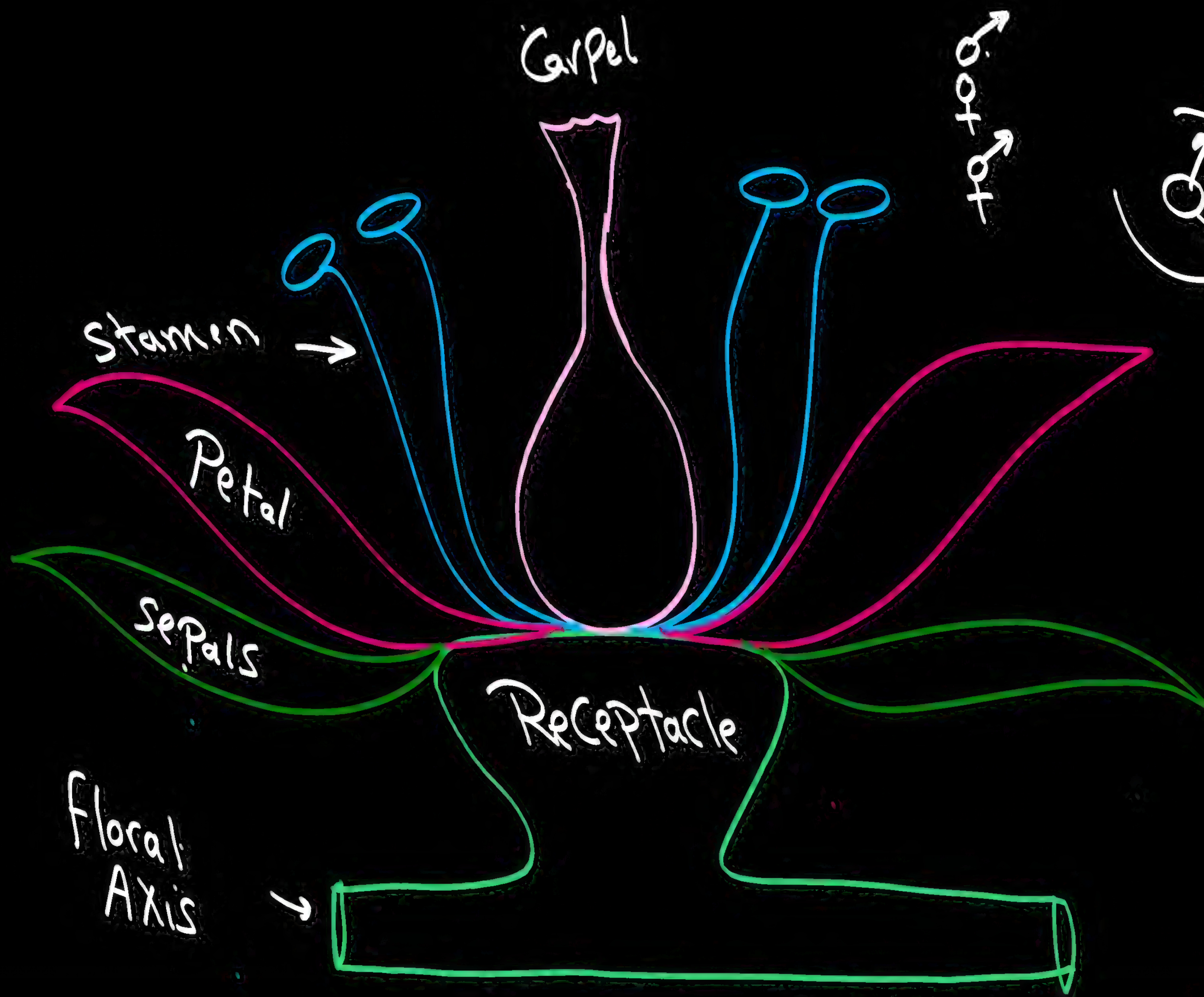
- Stalked
- Without Bract



- Sessile
- ✓ Bract



- ✗
- Sessile
- Without Bract



♂
to
♀

Typical
flower

4 Floral
whorls

Ex: Bean,
Onion

1 Calyx: → outer most whorl.

- units: sepal

- Function:
① Protection of floral whorls
 · Before Blooming.
② Share in Photosynthesis

↙ wind
Rain
Drought

② Corolla

unit: Petals → Bright Colors

Function:

- ① Attract insects for Pollination
- ② Protect sex organs

③ Andro Ceium

units → Stamen

function: formation of Pollen Grains



④ Gynoecium (♀)

unit: Carpel

function:

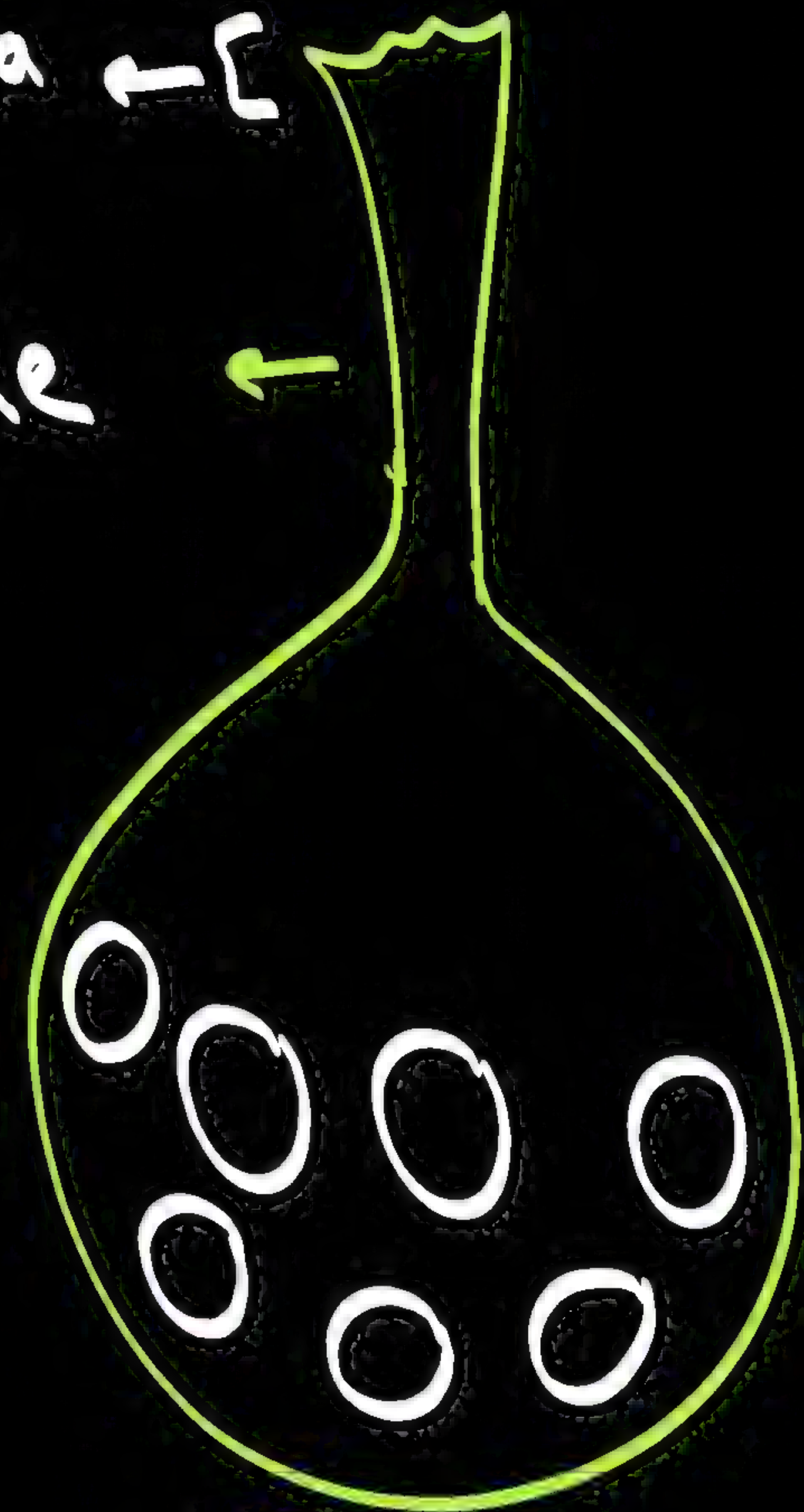
formation of ovules

Sticky
feathery → Stigma ①

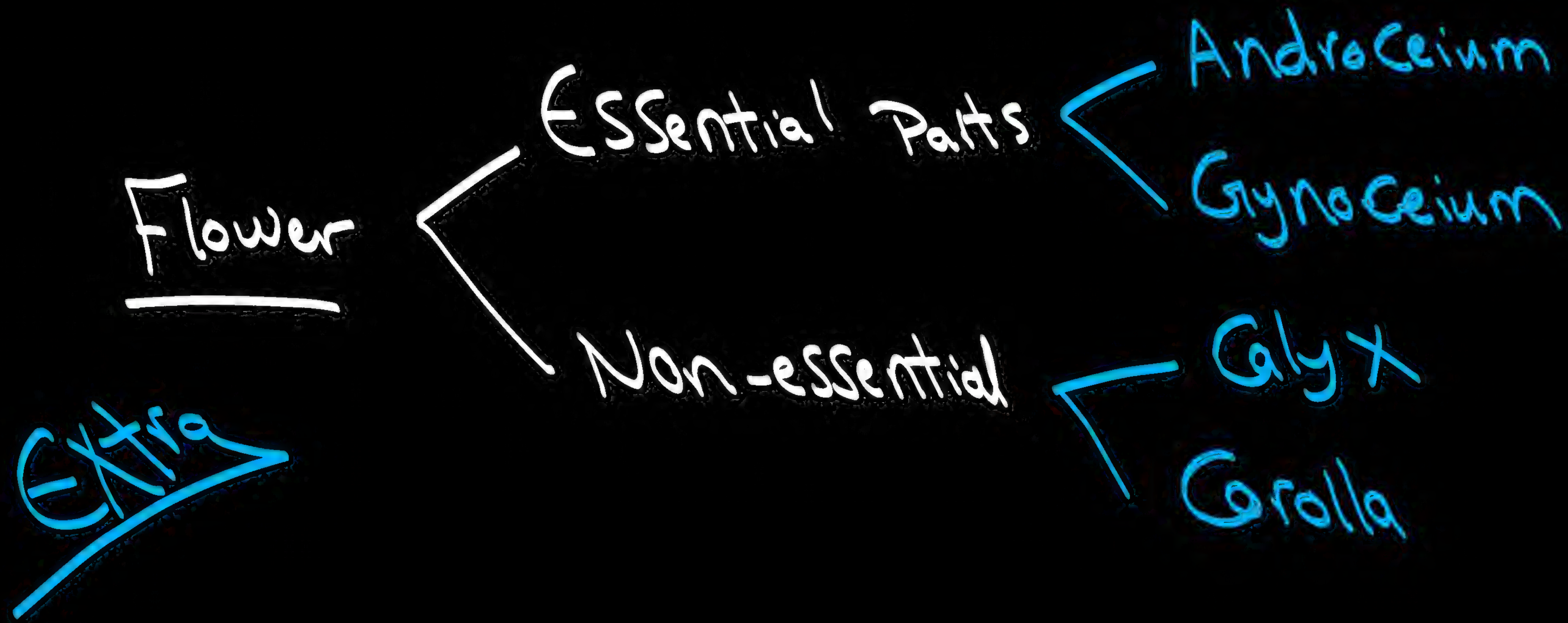
② style



③ Ovary
2
one ovule
or more



Carpel



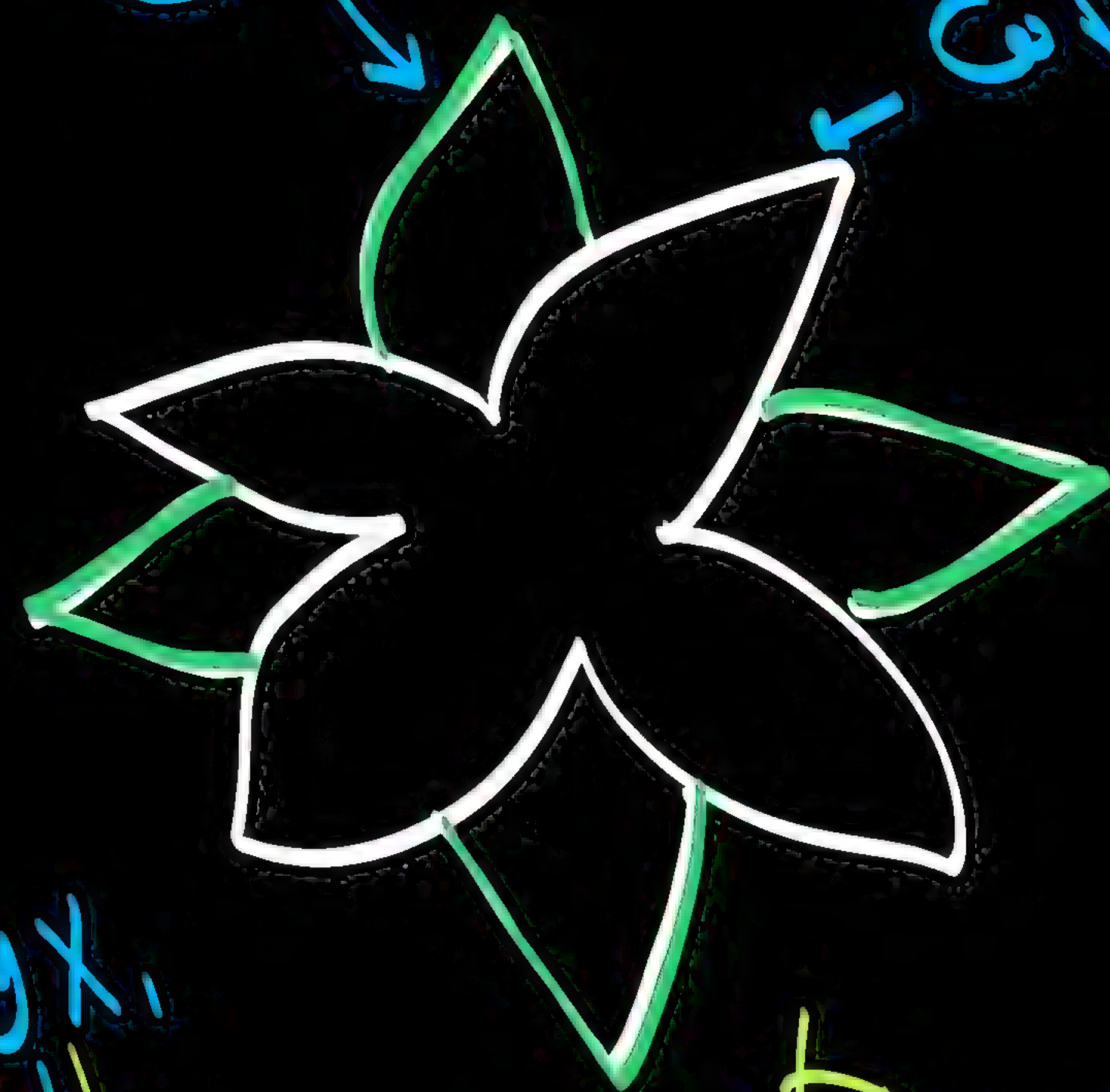
Perianth



A
Calyx, Corolla → Can't be differentiated

Some
Monocot
Flower

Calyx
Corolla



B
Calyx, Corolla, Can be differentiated

(Dicot Flower)

Formation of Pollen Grains

Lily Flower

Anther

Filament

4 Pollen grain
Sacs

Nuclear
Mitosis

Meiosis
(Cellular)

Spore mother
cells
large
nucleated



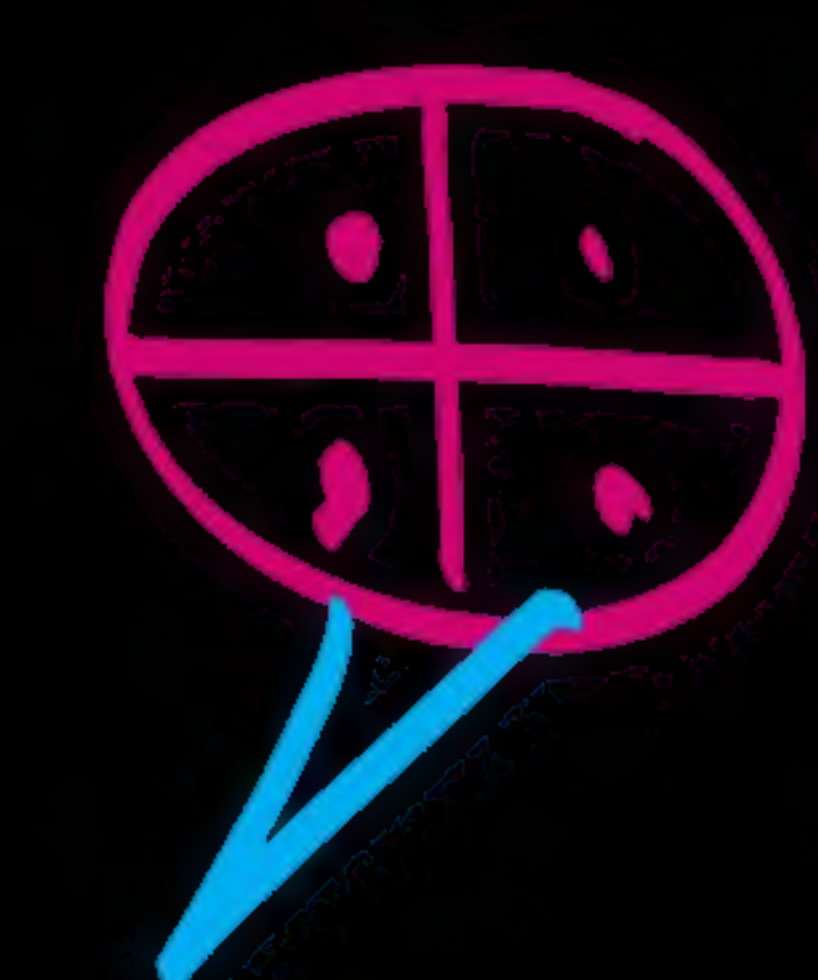
202

S.M.C
(2n) = 14

meiosis I
"Cellular"



Meiosis
II



4 Microspores
(n) = 7



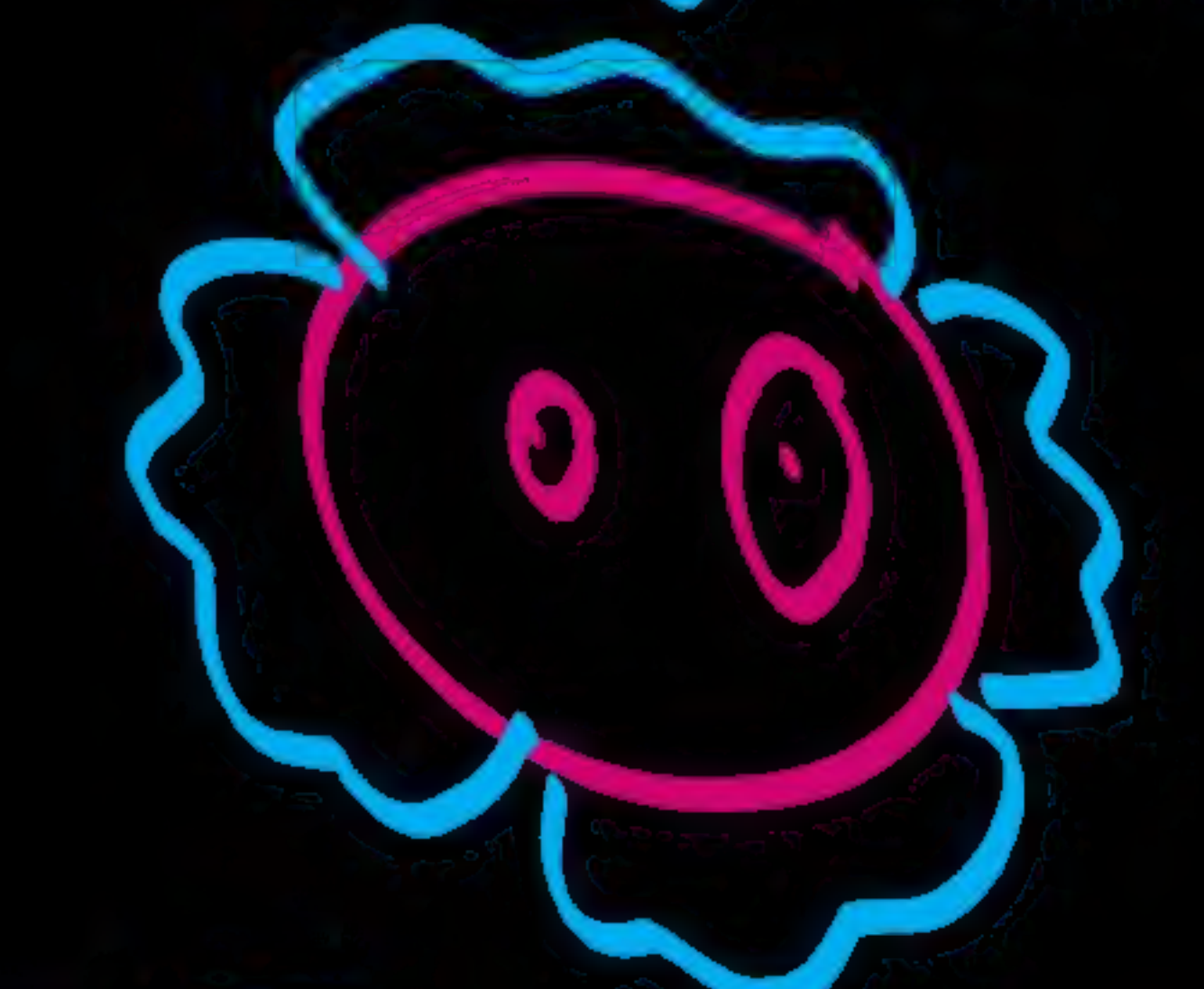
Nuclear
mitosis



Tube
nucleus
(n) =
(7)

Generative
nucleus
(n) = (7)

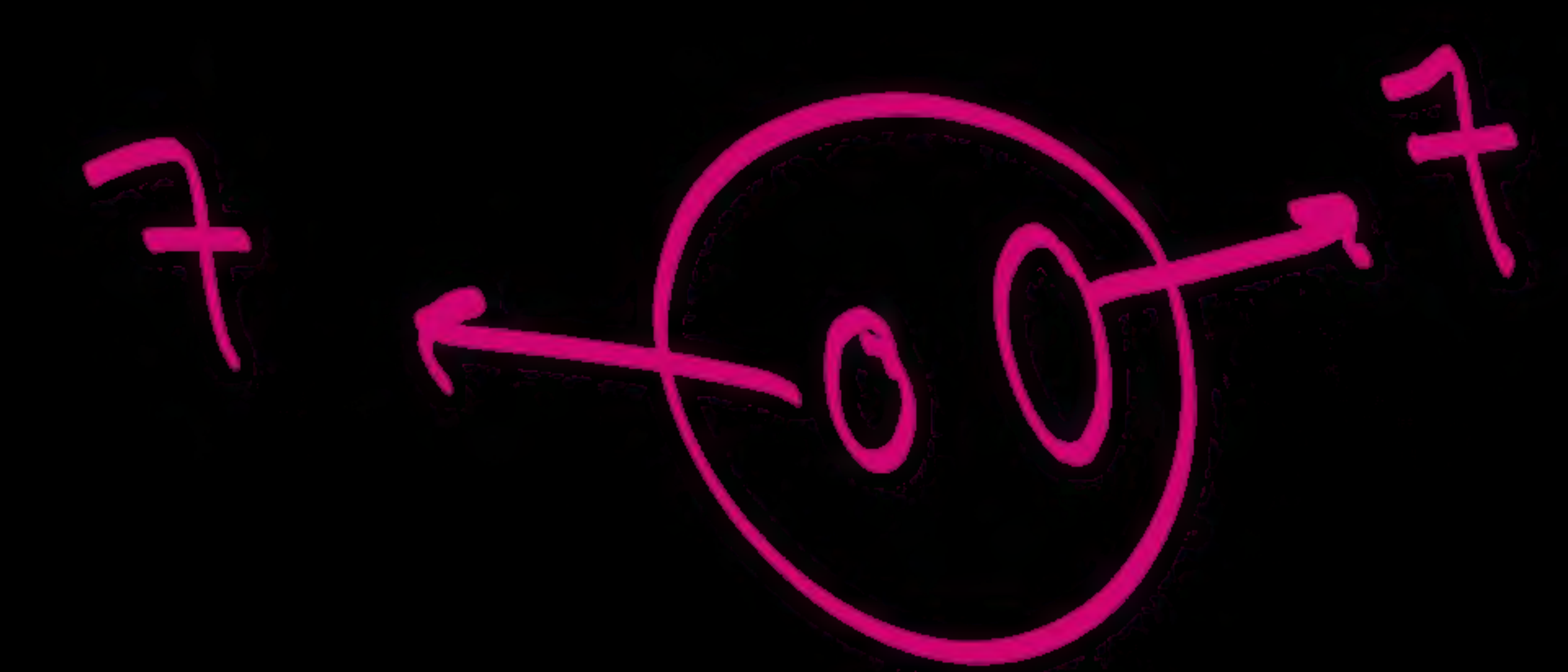
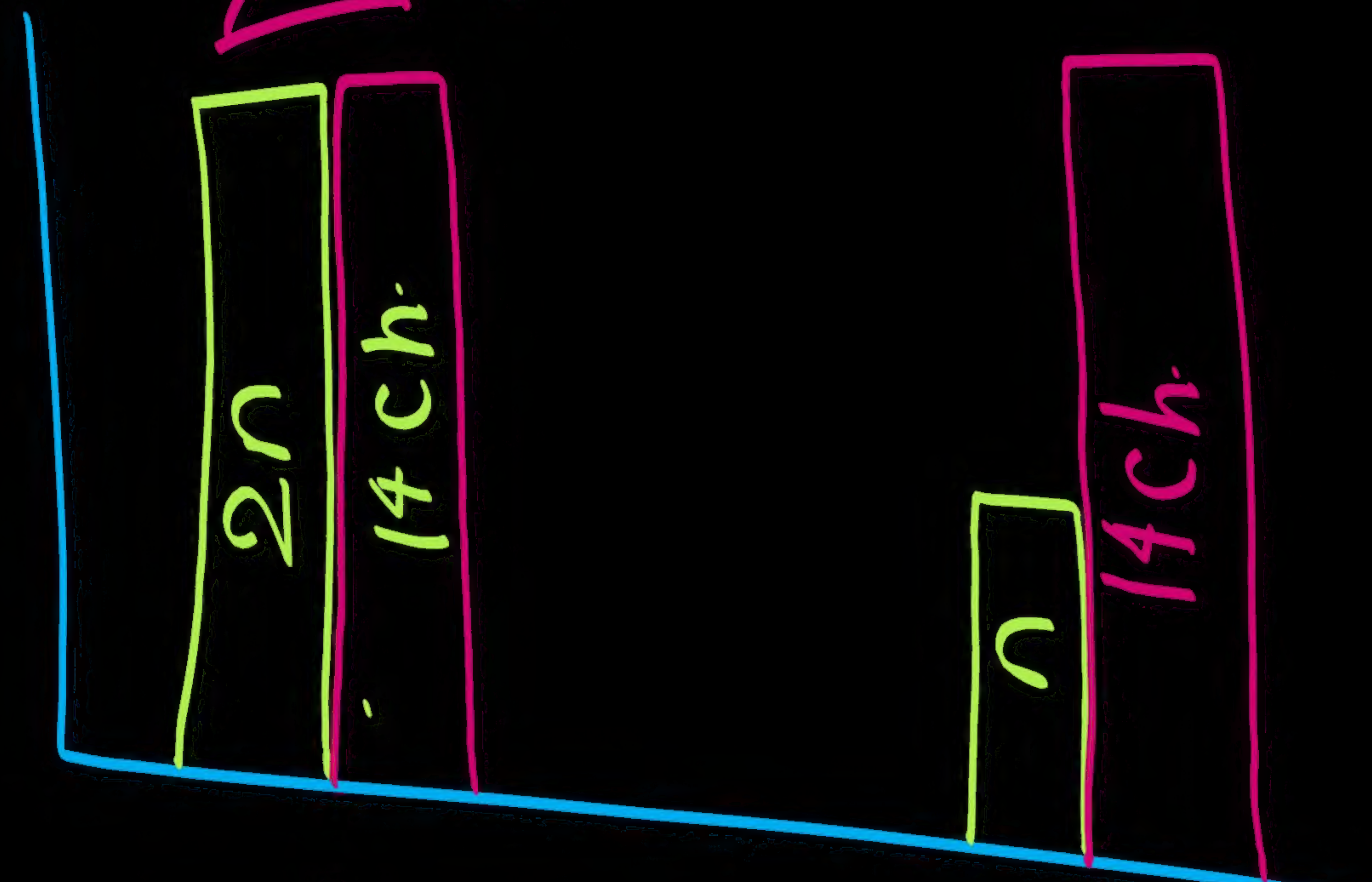
Thick
Coat



(n) Pollen Grain

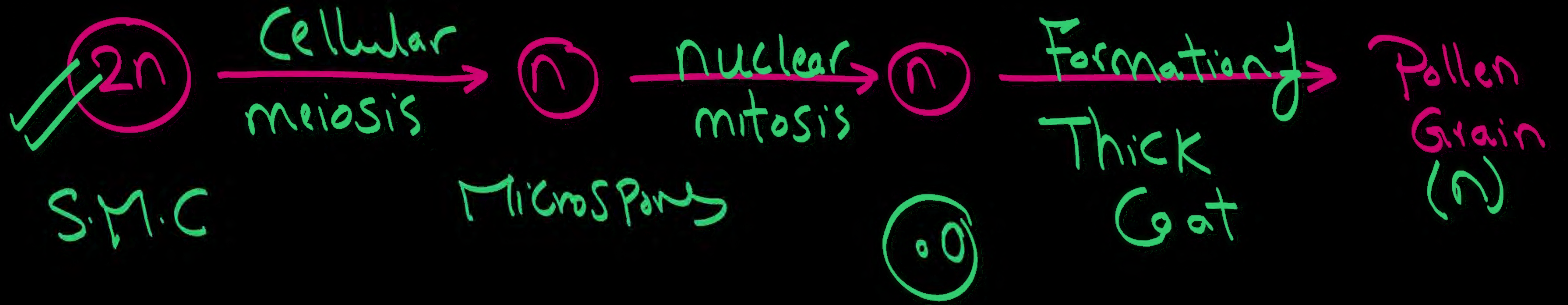
S.M.C
Somatic cell

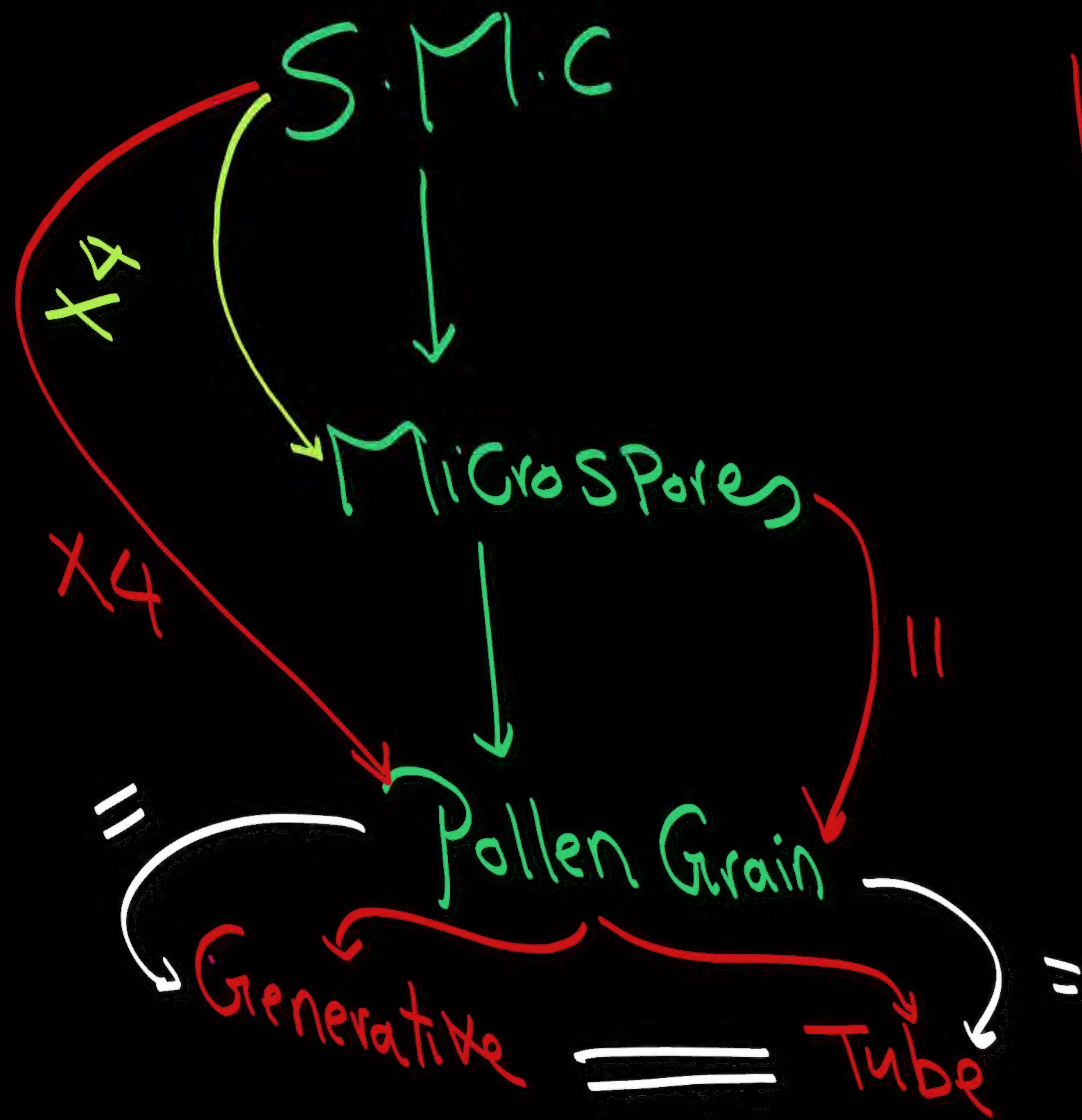
□ No. of chromosomes
□ ch. sets



2 Cells
from same
plant

A B → Pollen grain





20 S.M.C / Sac

- no. of microspores
- no. of Pollen grain
- Generative nuclei
- Tube nucleus

Sac

- 80 microspore
- 80 Pollen grain
- 80 Generative
- 80 Tube

In Anther

Anther

320

320

320

320

#